Course Name (System Networking)

1	Subject Name	System Networking using Microsoft Server 2012
2	Course Code	
3	Teaching Hours/week	2 hours/Week
4	Practical /week	1 Hour/Week
5	Credits	4
6	Reference Book	MCSA Windows Server 2012 Complete Study Guide: Exams 70-410, 70-411, 70-412
7	Teaching method	Lecture & Problem Based Learning
8	Subject Status	
9	Prerequisite	Knowledge of Network Fundamentals

Course Description

The System Networking course is introduced to equip students with the knowledge of System Administration. We will implement this course using the Microsoft Server 2012 R2 which is the latest version of server in Microsoft platform. This course will include the main contents of Microsoft MCSE course which includes the following topics:

- ✓ AD DS Configuration and Administration
- ✓ AD Backup and Restoration
- ✓ DHCP & DNS Server Configuration and Administration
- ✓ File Server, FTP Server, DFS & Print Server installation and Configurations
- ✓ VPN Configuration …etc.

Learning Objectives

The main objective of the course is to equip the students with the knowledge of System Administration using Windows Server 2012 R2. By the completion of this course the students will be able to design, configure and troubleshoot a small to medium size network.

Week 1	**Introduction of the course:** - Introduction to the course - Introduction to network & internetwork - Introduction to Server 2012: - Hardware requirements - Editions - New features - Windows Server 2012 R2 Installation
Week 2	**Introduction to Active Directory** - Introduction to Active Directory - DNS - Domain - Domain Controller - User accounts, Group Accounts & OUs - Local and domain users
Week 3	**AD installation, configuration and Users, Groups & OU management :** - AD requirements - AD & DNS Installation - Creating AD Objects ▪ Users ▪ Groups ▪ OUs
Week 4	**Joining Clients to Domain & Managing AD objects using Windows PowerShell** - Joining a client to the domain - Remote Desktop connection - Introduction to Windows Power Shell - Difference between Power Shell & Power Shell ISE - Managing AD objects using Power Shell - **COMPUTER LAB (STUDENTS PRACTICE)**

Week 5	**Managing GPOs:** - Introduction to GPO - Local and domain group policies - Working with the following GPO: o Prevent Access to control panel o Deny removable storage o Desktop wallpaper o Deny changing desktop wallpaper o Allow logon locally - Default domain policies - Domain Controllers policies - **COMPUTER LAB (STUDENTS PRACTICE)**
Week 6	**DCHP Server installation & configuration:** - Introduction to DHCP - Static and Dynamic IP configuration - Benefits of DHCP - DORA Process & DHCP Scope - DHCP Lease duration - DHCP Reservation - DHCP authorization - DHCP Scope activation - DHCP installation and configuration - **COMPUTER LAB (STUDENTS PRACTICE)**
Week 7	**File Server & DFS configuration along with NTFS permissions:** - Introduction to file server - NTFS Permissions - Shared Level Permissions - Basic data sharing - Mapping Network drive manually - DFS - Mapping Network Drive using GPO - DFS Installation and configuration - **COMPUTER LAB (STUDENTS PRACTICE)**
Week 8	**Remote Software installation using GPO & Print Server configuration** - Remote software installation - Software installation using GPO - Print server - Local and network printer - Print server configuration - Printer permissions - **COMPUTER LAB (STUDENTS PRACTICE)**
MID TERM EXAMINATION	

Week 9	**DNS Server (Theory)** - Introduction to DNS - DNS Components - DNS Namespace - DNS Query a. Recursive query b. Iterative query - DNS forwarders a. Standard forwarder b. Conditional forwarder - DNS cache - DNS Zones a. Forward lookup zone b. Reverse lookup zone - DNS Zone transfer - Other zone types - DNS database (DNS records)
Week 10	**DNS Server installation, configuration & DNS zone transfer** - DNS Installation - DNS Configuration - Configuration of DNS Forwarders - Creating DNS Zones - Secondary DNS Server and DNS zone transfer - **COMPUTER LAB (STUDENTS PRACTICE)**
Week 11	**Windows Server 2012 Backup & AD backup** - Windows server backup - WBAdmin backup - NTDSUtil backup - Windows server back installation and backing up data and AD database
Week 12	**AD restoration** - AD restoration - Non-Authoritative restoration - Authoritative restoration - USN Number - **COMPUTER LAB (STUDENTS PRACTICE)**
Week 13	**FTP server installation & configuration** - Introduction to FTP Server - Installation of FTP Server - Configuration of FTP Server - User account and Password policies - Configuration of user account and password policies - **COMPUTER LAB (STUDENTS PRACTICE)**

Week 14	**VPN Server & Delegation of Control:** - Introduction to VPN - VPN requirements - Remote Access Installation - VPN Configuration - Delegation of control - AD Permissions - **COMPUTER LAB (STUDENTS PRACTICE)**
Week 15	**NIC Teaming & RODC configuration:** - Introduction to RODC - RODC application - RODC installation - RODC Configuration - NIC teaming - **COMPUTER LAB (STUDENTS PRACTICE)**
Week 16	**Overall Review & Quiz:** - Overall review of the lectures - QUIZ

Assessment

1) Midterm exams 20 %
2) Attendance and group work 10 %
3) Projects, presentations, and other tasks 10 %
4) Final Exam 60 %

Total Marks: **100**

Recommended Books:

- MCSA Windows Server 2012 Complete Study Guide: Exams 70-410, 70-411, 70-412
- Train Signal Reference videos of Server 2012